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EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 11/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/617,736

Applicant(s)

XIE ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-11 and 13-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 6-8, 11, 13-15, 18-20, 22-29, 31 and 32 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 9, 10, 16, 17, 30 and 33-35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 16.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: See Head

## **DETAILED ACTION**

### ***Response to Amendment***

1. This action is responsive to amendment B filed 8/7/02. Claims 1, 8-11, 13 and 14 are amended. New claims 15-35 are now added and claims 5 and 12 are now canceled. Claims 1-4, 6-11 and 13-35 are now pending in the application.
2. Based on the applicant's amendment the objections to the specification are withdrawn and the rejections of claims 1 and 8 under 35 U.S.C. 112, second paragraph, are also withdrawn. The rejections of claims 5 and 12 under 35 U.S.C. 112, second paragraph, are moot because claims 5 and 12 have been canceled.

### ***Response to Arguments***

3. Applicant's arguments with respect to claim have been considered but are moot in view of the new ground(s) of rejection.

### ***Drawings***

4. The drawings are objected to because reference number (410) in Fig. 5 does not designate an axis. Correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claims 22-29, 31 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 22 depends upon claim 22. A dependent claim may only be dependent upon a preceeding claim. Claims 23-29 are dependent from claim 22 and are indefinite for the same reason(s) as claim 22.

Claim 31 recites the limitation "the curing process of said epoxy" in the second line. There is insufficient antecedent basis for this limitation in the claim.

Claim 32 recites the limitation "throughout said curing process" in the second and third lines. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 8 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,881,185 to Reth et al.

Referring to claim 1, Feth et al. discloses all the limitations of the claimed method. Feth et al. discloses the method as claimed, including providing a plurality of polarization maintaining (PM) fibers (32,36), each fiber having a corresponding principal (fast) axis, disposing the plurality of PM fibers together as a grouping, the grouping

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having corresponding secondary (slow) axes, aligning each so the plurality of PM fibers such that the corresponding principal axes of each of the plurality of the PM fibers and the secondary axes of the grouping intersect at a predetermined angle while maintaining distinct optical transmission paths in each of the fibers. See Fig. 2-3, and their respective portions of the specification.

Referring to claims 8 and 15, Feth et al. discloses all the limitations of the claimed invention. Feth et al. discloses the apparatus as claimed, including a plurality of polarization maintaining (PM) fibers (32,36), each fiber having a corresponding principal (fast) axis, the plurality of PM fibers together as a grouping, the grouping having corresponding secondary (slow) axes, aligning each so the plurality of PM fibers such that the corresponding principal axes of each of the plurality of the PM fibers and the secondary axes of the grouping intersect at a predetermined angle while maintaining distinct optical transmission paths in each of the fibers. See Fig. 2-3, and their respective portions of the specification.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 4, 6, 7, 11, 13, 14 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,881,185 to Feth et al.

Referring to claims 4, 11 and 18, Feth et al. discloses all the limitations of the claimed invention except for disclosing the PM fibers are Panda fibers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a Panda fiber since it was known in the art that Panda fibers polarization maintaining characteristics.

Referring to claims 6, 13 and 19, Feth et al. discloses all the limitations of the claimed invention except for disclosing the PM fibers are Bowtie fibers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Bowtie fibers since it was known in the art that Bowtie fibers polarization maintaining characteristics.

Referring to claims 7, 14 and 20, Feth et al. discloses all the limitations of the claimed invention except for disclosing the PM fibers using stress applying parts (SAP). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to use fibers using SAPs since it was known in the art that fibers using SAPs have polarization maintaining characteristics.

***Allowable Subject Matter***

12. Claim 21 allowed.

13. Claims 2, 3, 9, 10, 16, 17, 30 and 33-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Claim 22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

15. Claims 23-29, 31 and 32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 2, 9 and 16, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that at least one of the predetermined angles is approximately  $0^{\circ}$ .

Referring to claims 3, 10 and 17, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose that at least one of the predetermined angles is approximately  $90^{\circ}$ .

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Referring to claims 21-29, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose a polarization beam splitter/combiner as claimed, including a body having a single mode fiber and a pigtail pair each optical coupled to the body, where the pigtail pair comprising a plurality of polarization maintaining (PM) fibers, the fibers having principal and secondary axes.

Referring to claim 30, 31 and 32, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose an apparatus as claimed, where the plurality of PM fibers are affixed with epoxy.

Referring to claims 33-35, the prior art does not disclose all the limitations of the claimed method. The prior art does not disclose the method including affixing the plurality of PM fibers together with epoxy.

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW  
October 31, 2002

*Sam Heat*  
2002/10/31